



U.S. ARMY  
MATERIEL COMMAND

— COMMITTED TO PROTECTION OF THE ENVIRONMENT —

FINAL PHASE II  
DATA ADDENDUM

SITE 36-7: SOLID WASTE BURIAL/SANITARY PI

September 1988  
Contract Number DAAK11-84-D-0016  
(Version 3.1)

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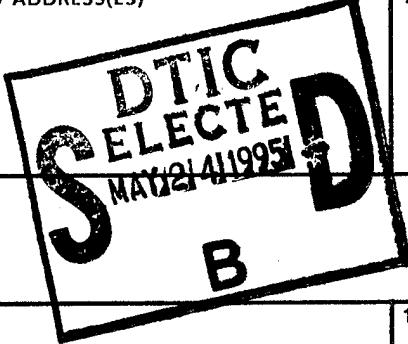
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**Rocky Mountain Arsenal**

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PREPARED BY

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Harding Lawson Associates

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PREPARED FOR

U.S. ARMY PROGRAM MANAGER'S OFFICE FOR THE ROCKY MOUNTAIN ARSENAL

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**SITE 36-7: SOLID WASTE BURIAL/SANITARY PIT**

**1.0 PHASE II PROGRAM**

As a result of the Phase I Contamination Assessment at Rocky Mountain Arsenal (RMA), a Phase II program was initiated at Site 36-7 in February, 1988. The Phase II Program was generally conducted as presented in the Phase I Contamination Assessment Report (CAR) (ESE, 1988, RIC#8804^R07), except that only six samples of trench material were obtained instead of the eight samples planned.

The Phase II investigation of Site 36-7 consisted of 8 pit borings yielding 22 samples and 22 soil borings yielding 40 samples. Pit boring locations were selected to explore potential disposal trenches, and soil boring sites were selected to investigate the remaining areas within Site 36-7. Observation pits were excavated with a backhoe in the eight suspected disposal trenches as defined by geophysical anomalies, interpretation of aerial photography, and review of historical data. Each pit was excavated to the trench bottom, as determined by visual inspection. A grab sample believed to be representative of the most contaminated material within the trench was obtained from excavated material. The pit was backfilled with clean (metal free) material, and the location was staked. The pit borings were drilled 5 feet (ft) below the base of the suspected disposal trench and sampled at the 0- to 1- and 4- to 5-ft intervals below the base.

A continuous shallow trench was excavated with a backhoe in the southernmost anomaly to identify the locations and orientations of suspected disposal trenches and to allow observation pits and pit borings to be targeted more accurately.

All soil samples (except for grab samples) were collected using the continuous soil sampling method detailed in the Task 1 Technical Plan (ESE, 1985, RIC#85127R07). Samples were obtained at predetermined intervals unless field conditions (e.g., depth to water table, staining, etc.) necessitated adjustment in the interval selections. Seven 1-ft-deep borings were drilled and sampled using hand-auger equipment. Locations of the observation pits and pit borings are shown on Figure 36-7-II-1 (See Section 2.0),

and locations of all Phase II borings are shown on Figure 36-7-II-2 (See Section 4.0).

The actual Phase II investigation varied from the proposed Phase II program in that only six grab samples of disposal trench material were obtained instead of the eight samples planned. A grab sample from Pit Boring 3682 was not obtained, because only natural soil and bedrock were encountered at that location. A grab sample from Pit Boring 3687 was not obtained, because the excavation caved and resulted in unsafe conditions for equipment and personnel. Boring 3687, however, was drilled through the trench material. The depth of the trench was determined from Boring 3687, and soil samples were obtained from beneath the trench.

Prior to any Phase II drilling, the Program Manager's Office (PMO), Environmental Science and Engineering (ESE), Morrison-Knudsen Engineers (MKE), and Harding Lawson Associates (HLA) formulated procedures for MKE to obtain subsamples from selected soil cores during Phase II drilling. MKE did not request subsamples at Site 36-7.

The following table summarizes the Phase II investigation at Site 36-7:

Boring <u>No.</u>	Total Depth (ft)	Sampling Interval(s)	No. of Samples
3683*	10	5-6, 9-10	2
3684*	15	2-3+, 10-11, 14-15	3
3685*	17	7-8+, 10-11, 15-16	3
3686*	15	7-8+, 10-11, 14-15	3
3687*	22	17-18, 21-22	2
3688*	14	5-6+, 9-10, 13-14	3
3689*	16	3-4+, 11-12, 15-16	3
3690*	15	4-5+, 10-11, 14-15	3
3691	5	0-1, 4-5	2
3692	5	0-1, 4-5	2
3693	5	0-1, 4-5	2
3694	5	0-1, 4-5	2
3695	5	0-1, 4-5	2
3696	5	0-1, 4-5	2
3697	5	0-1, 4-5	2
3698	5	0-1, 4-5	2
3699	5	0-1, 4-5	2
3700	1	0-1	1
3701	1	0-1	1

3702	1	0-1	1
3703	1	0-1	1
3704	1	0-1	1
3705	1	0-1	1
3706	1	0-1	1
3707	10	0-1, 4-5, 9-10	3
3708	10	0-1, 4-5, 9-10	3
3709	10	0-1, 4-5, 9-10	3
3710	3	0-1, 2-3	2
3711	3	0-1, 2-3	2
3712	3	0-1, 2-3	<u>2</u>
		Total	62

\* Pit boring

+ Grab sample of trench material

The Phase II analytical program was conducted as planned with the exception of the grab samples from Borings 3683 and 3687, which were not collected. Fifty-six samples were analyzed for semivolatile organic (SVO) compounds by gas chromatography/mass spectrometry (GC/MS) and for arsenic and mercury by atomic absorption (AA). Sixty-two samples were analyzed for cadmium, chromium, copper, lead, and zinc by the inductively coupled argon plasma (ICP) method. The 4-to 5-ft samples below the base of disposal trenches from Borings 3683 to 3690 and the 9- to 10-ft samples from Borings 3707 through 3709 were analyzed for volatile organic (VO) compounds by GC/MS. Six samples were analyzed by high-performance liquid chromatography (HPLC) for the Army Agent Degradation Products (ADP) thiodiglycol (TDGCL) and chloroacetic acid (CLC2A), and by ion chromatography (IONCHROM) for fluoro-acetic acid (FC2A), isopropylmethyphosphonic acid (IMPA), and methylphosphonic acid (MPA).

The six samples from the Phase II borings triangulated around Phase I Boring 3111 were analyzed for ICP metals to investigate the elevated cadmium in Boring 3111. The remaining samples were analyzed for the Phase I suite of analytes, because Phase I samples were not collected in the geophysical anomalies and disposal trenches investigated in the Phase II program. Selected Phase II samples were also analyzed for IMPA and TDGCL to screen for ADPs, as the HPLC and IONCHROM methods were not available during the Phase II program.

Phase I and Phase II analytical methods for Site 36-7 samples were the same for VO and SVO compounds, ICP metals, arsenic, and mercury; therefore, Phase I and Phase II results are directly comparable. Appendix 36-7-II-A provides a complete list of analytes, analytical methods, and standard abbreviations used in the Phase I and Phase II investigations.

## 2.0 PHASE II FIELD OBSERVATIONS

Surface conditions at Site 36-7 have not changed appreciably since the Phase I investigation was completed in the summer of 1985 (ESE, 1988, RIC#88063R07). Figure 36-7-II-1 shows the locations of excavated pits and trenches, excavation depths, trend outlines of possible disposal trenches as interpreted from aerial photographs, actual widths of intercepted disposal trenches, and a cross section showing the continuous shallow excavation profile with the intercepted disposal trenches projected onto the cross section. Table 36-7-II-1 presents a summary of pit excavation activities and observations.

Ground water was not encountered at any of the Phase II pits or borings at Site 36-7. Volcaniclastic bedrock was encountered in seven of the eight pit borings. Bedrock depths are presented on Table 36-7-II-1.

For safety purposes, air monitoring was conducted using a photoionization detector (PID) during drilling and excavation activities. In general, PID readings in the auger annulus and open trenches were background except in Pit Boring 3687, which registered a PID reading of 13.2 in the hollow-stem annulus at the 16- to 18-ft depth, and Boring 3698, which had a PID reading of 24 in the 0- to 1-ft sample. PID readings were at background levels in the breathing zone during field activities.

An M18A2 test kit was used to detect the presence of chemical agents in trenches, boreholes, and soil samples. Specifically at RMA, the M18A2 test kit is used to detect Sarin (GB), nerve agent (VX), mustard (H), and Lewisite (L), based on the knowledge that these agents were manufactured, stored, or demilitarized at the site. The detection limit for mustard agents is 0.5 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ), and the detection limit for GB, VX, and L is  $0.2 \text{ mg}/\text{m}^3$ . The detection limits for L and VX in soil are 5 and 5.9 parts per million (ppm), respectively. All M18A2 field test results for chemical agents at this site were negative.

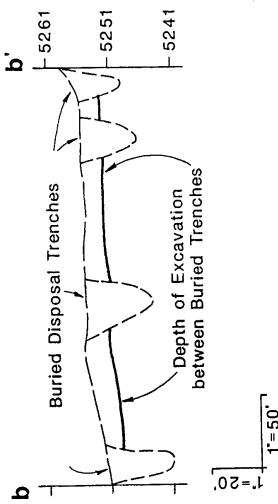
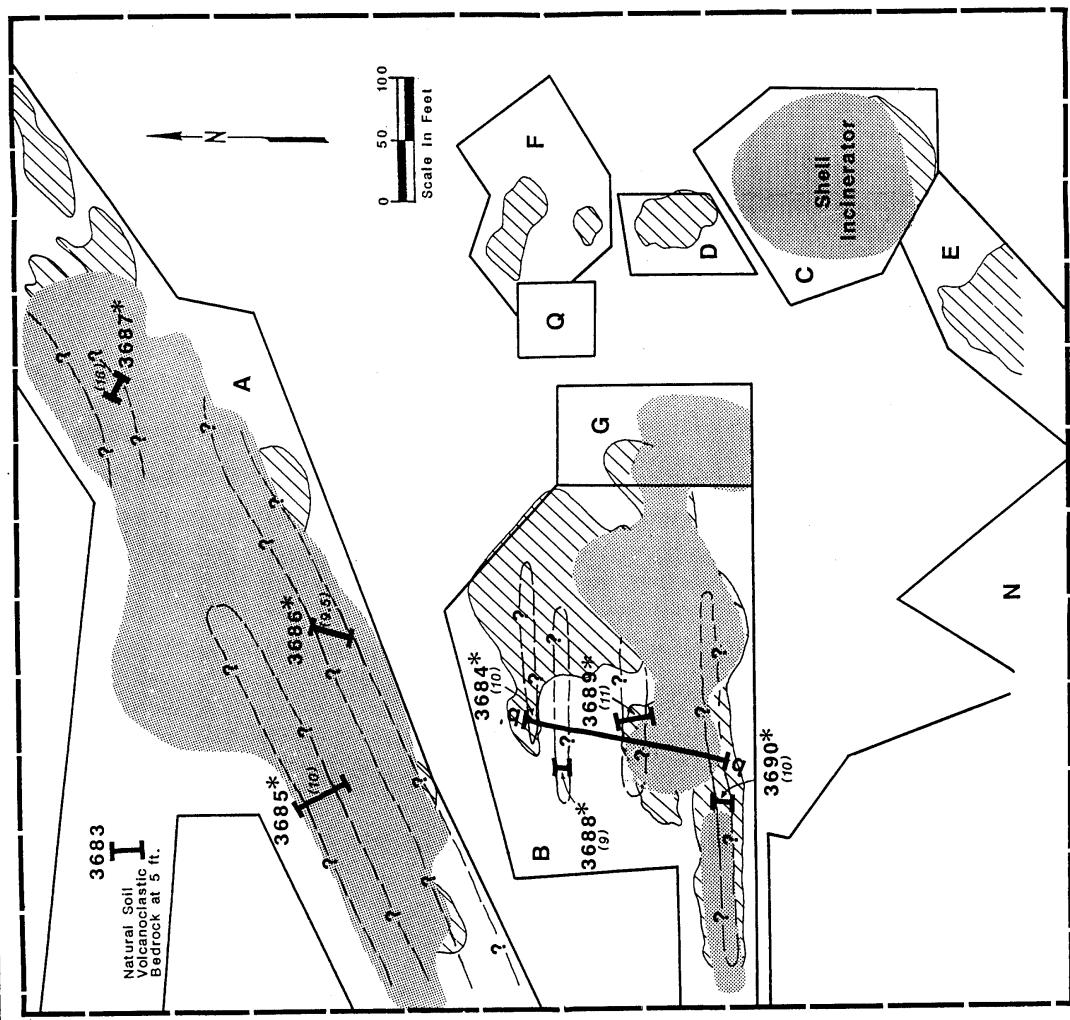


Figure 36-7-II-1  
SITE 36-7, TRENCH EXPLORATION INVESTIGATION  
PHASE II RESULTS  
SOURCE: HLA, 1988

Prepared for:  
U.S. Army Program Manager's Office  
For Rocky Mountain Arsenal  
Aberdeen Proving Ground, Maryland

Table 36-7-II-1. Summary of Pit Boring Activities and Observations

Pit Boring No.	Disposal Trench Depth (ft)	Pit Boring Depth (ft)	Disposal Trench Contents	Comments
3683	Trench not encountered	10	None	Volcaniclastic bedrock at 5 ft
3684	10	15	Paper, plastic, metal, lumber	Siltstone/volcaniclastic bedrock at 12.5 ft
3685	10	17	Plastic pipe, scrap metal, wood	Volcaniclastic bedrock at 9.5 ft
3686	9.5	15	Paper, cans, respirators, M-19 casings, scrap metal	Volcaniclastic bedrock at 9.2 ft
3687	16*	22	Paper, lumber, plastic	Excavation pit abandoned due to severe instability
3688	9	14	Paper, lumber, plastic	Volcaniclastic bedrock at 10.4 ft
3689	11	16	Old tires, automotive trash	Volcaniclastic bedrock at 15.5 ft
3690	10	15	Paper, wood, plastic	Volcaniclastic bedrock at 10 ft

\* Estimated from soil core obtained during drilling

Source: ESE, 1988.

Samples at Site 36-7 were also tested for chemical agents by the RMA laboratory, because historical evidence indicated possible agent presence. A composite of aliquots from each sample was initially analyzed for GB, VX, H, and L. If agent had been detected, individual samples from each boring would have been analyzed to identify stratigraphic location. No positive results for chemical agents were found at this site.

### 3.0 PHASE II GEOPHYSICAL EXPLORATION

No geophysical survey was conducted at Site 36-7 for the Phase II investigation. Fifteen boring locations were cleared, however, for safety purposes in accordance with the borehole clearance geophysical program detailed in the Task 1 Technical Plan (ESE, 1985, RIC#85127R07). Borehole site clearance was used to ensure that drilling would not encounter buried unexploded ordnance or other metal that could pose a significant safety risk. Magnetic intensity readings were obtained with a gradiometer. A 20-ft-square grid was centered at each boring location, and gradiometer readings were obtained at 5-ft intervals throughout the area. A contour map was prepared from the data and was used to place the boring in the safest location within the geophysical plot. Following borehole site clearance, a metal detector was used to check for surficial (0 to 2 ft) metal. None of the 15 borings were relocated as a result of the borehole site clearance conducted at Site 36-7.

The seven hand-augered boring locations were cleared by a metal detector survey for shallow (0 to 2 ft) buried metal. None of these borings had to be relocated after the metal detector survey.

#### 4.0 PHASE II ANALYTE LEVELS AND DISTRIBUTION

Table 36-7-II-2 contains indicator ranges and a statistical summary of Phase II analytical results. A summary of analytical data for each sample, including lithology and air monitoring results, is presented in Table 36-7-II-3. A tabulation of all analytical data associated with the Phase II investigation at this site is presented in Appendix 36-7-II-B.

To assess the significance of metal and organic analytical values, indicator ranges were established during the Phase I program. For organic compounds, the indicator level is the method detection limit. For metals, a range of values was chosen to reflect the upper end of the expected natural range for each metal as normally found in RMA alluvial soil. The procedure for establishing indicator ranges is presented in the Introduction to the Contamination Assessment Reports (ESE, 1987, RIC#88204R02). Concentrations within or above indicator ranges for Phase I and Phase II data are presented in Figure 36-7-II-2.

Eleven samples were analyzed for VO compounds; the only target compound detected was methylene chloride in two samples at low concentrations (Boring 3684, 14 to 15 ft, 1 ppm; Boring 3690, 14 to 15 ft, 0.7 ppm). Fifty-six samples were analyzed for SVO; dieldrin was the most prevalent compound detected with concentrations ranging from 0.3 to 10 parts per million (ppm) in 8 samples. Four samples contained chlorophenylmethyl sulfone (CPMSO<sub>2</sub>) at concentrations ranging from 0.7 to 2 ppm. Isodrin, endrin, chlorophenylmethyl sulfide (CPMS), and chlorophenylmethyl sulfoxide (CPMSO) were each detected in one sample.

Four of the dieldrin detections, the endrin detection (1 ppm), and the isodrin detection (0.5 ppm) were found in samples from the pit borings. Phase II results showed a dieldrin detection of 10 ppm in the grab sample from the 2-to 3-ft interval of Pit Boring 3684. Lower levels of dieldrin were detected in Pit Borings 3686 (1 ppm, 7- to 8-ft interval), 3688 (0.4 ppm, 5- to 6-ft interval), and 3691 (2 ppm, 0- to 1-ft interval). The highest concentration was detected in Pit Boring 3684, which is approximately 50 ft northwest of Boring 3113. As noted in Table 36-7-II-1, Pit Boring 3684 (2- to 3-ft interval) was sampled from a buried disposal trench containing paper, lumber, metal, and plastic.

Table 36-7-11-2. Summary of Analytical Results for Site 36-7 Phase III Soil Samples

Constituent	Number of Samples*	Range	Mean**	CONCENTRATIONS (ug/g)			ESE Detection Limit	Indicator Level
				Median**	Standard Deviation**	ESE		
IMPA (N=6)+	0	--	--	--	--	2.1	DL	
IMPA	2	2.9-15	--	--	--	2.0	DL	
Fluoroacetic Acid	0	--	--	--	--	2.0	DL	
MPA	0	--	--	--	--	DL	DL	
TDGCL (N=6)+	0	--	--	--	--	2.6	DL	
Thiodiglycol	0	--	--	--	--	18	DL	
Chloroacetic Acid	0	--	--	--	--	DL	DL	
VOLATILE ORGANICS (N=11)+								
Methylene Chloride	2	0.7-1	--	--	--	0.3	DL	
SEMI-VOLATILE ORGANICS (N=56)+								
CMPs	1	8	--	--	--	0.3	DL	
CHPSO	1	4	--	--	--	0.4	DL	
CHPSO2	4	0.7-2	--	--	--	0.3	DL	
Dieldrin	8	0.3-10	2	0.9	3	0.3	DL	
Endrin	1	1	--	--	--	0.7	DL	
Isodrin	1	0.5	--	--	--	0.3	DL	
ICP METALS (N=62)+								
Cadmium	1	1.3	--	--	--	0.92	DL-2.0	
Chromium	37	8.4-18	12	12	2.5	7.2	25-40	
Copper	62	6.5-77	16	11	13	4.8	20-35	
Lead	7	22-81	50	48	23	17	25-40	
Zinc	62	25-250	56	44	37	16	60-80	
ARSENIC (N=56)+	7	6.0-15	7.9	6.8	3.3	4.7	DL-10	
MERCURY (N=56)+	14	0.054-2.1	0.38	0.11	0.64	0.050	DL-0.10	

\* Number of samples in which constituent was detected. Only these sample results were used in statistical analyses.

\*\* Statistics not calculated when constituent detected in fewer than five samples.

+ Number of samples analyzed by laboratory.

DL Detection limit.

Source: ESE. 1988.

Table 36-7-11-3. Concentrations of Target Analytes Above Detection Limits in Site 36-7 Phase II Soil Samples (page 1 of 5)

Boring Number	3683	3683	3684	3684	3685	3685	3686	3686
Depth (ft)	5-6	9-10	2-3	10-11	14-15	7-8	10-11	14-15
Geologic Material	Volcanic-clastic (Denver Fm)	Volcanic-clastic (Denver Fm)	Trench Material	Clayey Silt	Trench Material	Volcanic-clastic (Denver Fm)	Trench Material	Volcanic-clastic (Denver Fm)
<b>AIR MONITORING</b>								
PID*	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SOIL CHEMISTRY								
IMPA (ug/g)								
IMPA	NRQ	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ
Fluoroacetic Acid	NRQ	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ
MPA	NRQ	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ
TDGCL (ug/g)								
Thiodiglycol	NRQ	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ
Chloroacetic Acid	NRQ	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ
Volatile Organics (VO) by GC/MS (ug/g)								
Methylene Chloride	NRQ	BDL	NRQ	NRQ	1	NRQ	NRQ	NRQ
Semi volatile Organics (SVO) by GC/MS (ug/g)								
CPMS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CPMSO	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CPMS2	BDL	BDL	BDL	BDL	0.7	BDL	BDL	BDL
Dieldrin	BDL	BDL	10	0.3	BDL	BDL	BDL	BDL
Endrin	BDL	BDL	1	BDL	BDL	BDL	BDL	BDL
Isodrin	BDL	BDL	0.5	BDL	BDL	BDL	BDL	BDL
ICP metals (ug/g)								
Cadmium	BDL	BDL	BDL	BDL	1.3	BDL	BDL	BDL
Chromium	BDL	BDL	17	9.5	12	BDL	BDL	BDL
Copper	34	32	25	23	51	33	35	35
Lead	BDL	BDL	42	48	BDL	61	41	18
Zinc	67	71	76	49	87	170	65	62
Arsenic (ug/g)								
Mercury	BDL	BDL	0.11	0.14	BDL	7.0	BDL	BDL
Mercury	BDL	BDL	0.11	0.14	BDL	1.7	0.075	BDL

&lt; Higher detection limit due to dilution or soil matrix masking effects.

&gt; Quantitative concentration was not achieved due to dilution constraints.

\* As calibrated to an isobutylene standard.

BDL Below detection limit.

No reading above ambient background.

NRQ Analysis not requested.

NA Not analyzed.

Table 36-7-11-3. Concentrations of Target Analytes Above Detection Limits in Site 36-7 Phase II Soil Samples (page 2 of 5)

Boring Number	3687	3688	3688	3689	3689	3690	3690	3691
Depth (ft)	21-22	5-6	9-10	13-14	3-4	4-5	10-11	0-1
Geologic Material	Silty Clay	Trench Material	Clayey Silt	Volcanic-clastic Material	Sandy Silt	Trench Material	Volcanic-clastic Material	Silty Sand
(Denver Fm)								
AIR MONITORING								
PID*	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD
SOIL CHEMISTRY								
IMPA (ug/g)								
IMPA	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Fluoroacetic Acid	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
MPA	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
TDGL (ug/g)								
Thiodiglycol	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Chloroacetic Acid	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Volatile Organics (VO) by GC/MS (ug/g)								
Methylene Chloride	BDL	NRQ	NRQ	BDL	NRQ	BDL	NRQ	NRQ
Semi-volatile Organics (SVO) by GC/MS (ug/g)								
CPMS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CPMSO	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CPMSO2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dieldrin	BDL	0.4	BDL	BDL	BDL	BDL	BDL	BDL
Endrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Isodrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ICP metals (ug/g)								
Cadmium	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chromium	BDL	15	BDL	BDL	14	9.9	17	9.4
Copper	34	77	11	41	21	13	17	20
Lead	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zinc	85	100	39	78	250	48	57	150
Arsenic (ug/g)	BDL	6.8	BDL	BDL	BDL	BDL	6.7	BDL
Mercury (ug/g)	0.063	0.30	0.13	BDL	0.11	BDL	BDL	BDL

&lt; Higher detection limit due to dilution or soil matrix masking effects.

&gt; Quantitative concentration was not achieved due to dilution constraints.

\* As calibrated to an isobutylene standard.

BDL Below detection limit.

BKD No reading above ambient background.

NRQ Analysis not requested.

NA Not analyzed.

Table 36-7-11-3. Concentrations of Target Analytes Above Detection Limits in Site 36-7 Phase II Soil Samples (page 3 of 5)

Boring Number	3692	3693	3694	3695	3696	3697
Depth (ft)	0-1	0-1	0-1	0-1	4-5	4-5
Geologic Material	Silty Sand	Silty Sand	Silty Sand	Sandy Silt	Sandy Silt	Silty Sand
<b>AIR MONITORING</b>						
PID*	BDL	BDL	BDL	BDL	BDL	BDL
SOIL CHEMISTRY						
IMPA (ug/g)						
IMPA	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Fluoroacetic Acid	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
MPA	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
TDGCL (ug/g)						
Thiodiglycol	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Chloroacetic Acid	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Volatile Organics (VO) by GC/MS (ug/g)						
Methylene Chloride	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Semi volatile Organics (SVO) by GC/MS (ug/g)						
CPMS	BDL	BDL	BDL	BDL	BDL	BDL
CPMSO	BDL	BDL	BDL	BDL	BDL	BDL
CPMSOZ	BDL	BDL	BDL	BDL	BDL	BDL
Dieldrin	BDL	BDL	BDL	BDL	BDL	BDL
Endrin	BDL	BDL	BDL	BDL	BDL	BDL
Isodrin	BDL	BDL	BDL	BDL	BDL	BDL
ICP metals (ug/g)						
Cadmium	BDL	BDL	BDL	BDL	BDL	BDL
Chromium	BDL	BDL	12	11	18	12
Copper	8.3	8.8	8.9	13	14	10
Lead	BDL	BDL	BDL	72	13	8.4
Zinc	35	35	32	50	36	36
Arsenic (ug/g)						
Mercury (ug/g)	BDL	BDL	BDL	BDL	BDL	BDL
					2.1	0.061

< Higher detection limit due to dilution or soil matrix masking effects.

> Quantitative concentration was not achieved due to dilution constraints.

\* As calibrated to an isobutylene standard.

BDL Below detection limit.

BDK No reading above ambient background.

NRQ Analysis is not requested.

NA Not analyzed.

Table 36-7-11-3. Concentrations of Target Analytes Above Detection Limits in Site 36-7 Phase II Soil Samples (page 4 of 5)

Boring Number	Depth (ft)	Geologic Material	3698 0-1 Silty Sand	3699 4-5 Silty Sand	3699 0-1 Silty Sand	3700 4-5 Silty Sand	3701 0-1 Sandy Silt	3702 0-1 Sandy Silt	3703 0-1 Sandy Silt	3704 0-1 Silty Sand	3705 0-1 Sandy Silt	3706 0-1 Sandy Silt	3707 4-5 Silty Sand	
AIR MONITORING														
PID*	24	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD
SOIL CHEMISTRY														
IMPA (ug/g)														
IMPA	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Fluoroacetic Acid	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
MPA	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
TDGCL (ug/g)														
Thioglycol	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Chloroacetic Acid														
Volatile Organics (VO) by GC/MS (ug/g)														
Methylene Chloride	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Semi volatile Organics (SVO) by GC/MS (ug/g)														
CPMS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CPMSO	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CPMSO2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dieldrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Endrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Isodrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ICP metals (ug/g)														
Cadmium	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chromium	BDL	9.5	BDL	11	8.8	BDL	11	12	16	10	12	BDL	BDL	BDL
Copper	7.4	8.9	7.7	10	9.8	BDL	8.4	12	13	8.7	11	9.3	7.0	9.4
Lead	BDL	BDL	BDL	35	44	37	BDL	23	46	33	52	BDL	BDL	BDL
Zinc	34	39						28	49			39	25	35
Arsenic (ug/g)														
Mercury	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Mercury (ug/g)														

< Higher detection limit due to dilution or soil matrix masking effects.

> Quantitative concentration was not achieved due to dilution constraints.

\* As calibrated to an isobutylene standard.

BDL Below detection limit.

BKD No reading above ambient background.

NRQ Analysis is not requested.

NA Not analyzed.

Table 36-7-11-3. Concentrations of Target Analytes Above Detection Limits in Site 36-7 Phase II Soil Samples (page 5 of 5)

Boring Number Depth (ft.) Geologic Material	3707 9-10 Silty Sand	3708 0-1 Sandy Silt	3708 4-5 Clayey Silt	3708 9-10 VFG Sand	3709 0-1 Sandy Silt	3709 4-5 Clayey Silt	3709 9-10 VFG Sand	3710 0-1 Silty Sand	3710 2-3 Silty Sand	3711 0-1 Silty Sand	3712 2-3 Silty Sand	3712 2-3 Silty Sand
AIR MONITORING PID*	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD	BKD
SOIL CHEMISTRY IMPA (ug/g)												
IMPA	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Fluoroacetic Acid	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
MPA	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
TDGCL (ug/g)												
Thiodiglycol	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Chloroacetic Acid	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Volatile Organics (VO) by GC/MS (ug/g)												
Methylene Chloride	BDL	NRQ	BDL	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ	NRQ
Semi-volatile Organics (SVO) by GC/MS (ug/g)												
CPMS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ
CPMSO	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ
CPMSO2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ
Dieldrin	BDL	0.5	BDL	BDL	0.4	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ
Endrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ
Isodrin	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ
ICP metals (ug/g)												
Cadmium	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chromium	9.3	BDL	9.1	16	12	14	14	13	8.8	6.5	9.1	7.8
Copper	11	11	9.8	12	14	14	14	13	8.8	6.5	9.1	7.5
Lead	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zinc	34	39	35	39	54	51	37	34	28	37	32	34
Arsenic (ug/g)												
Mercury	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NRQ	NRQ	NRQ	NRQ

&lt; Higher detection limit due to dilution or soil matrix masking effects.

&gt; Quantitative concentration was not achieved due to dilution constraints.

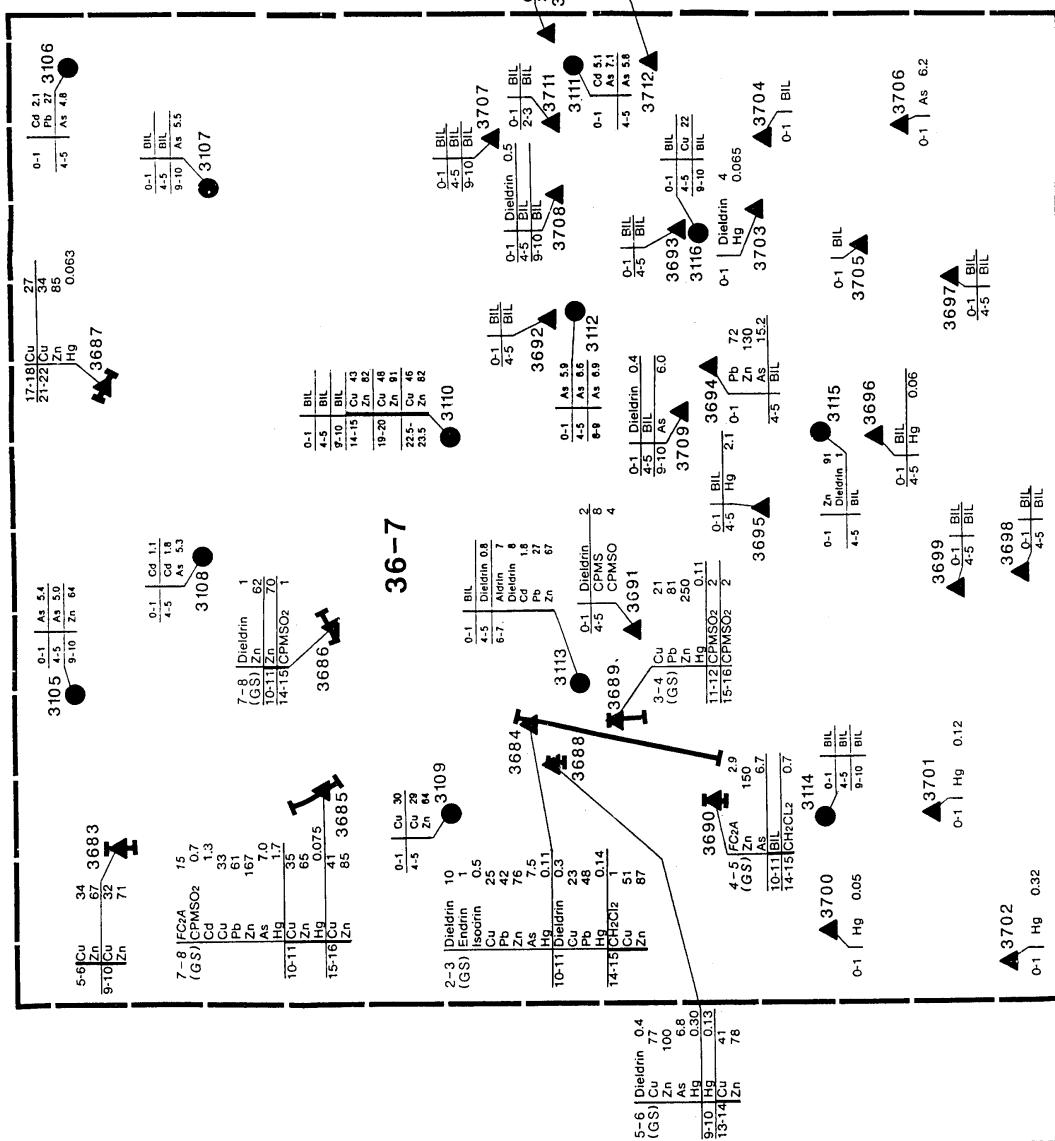
\* As calibrated to an isobutylene standard.

BDL Below detection limit.

BKD No reading above ambient background.

NRQ Analysis not requested.

NA Not analyzed.



**Figure 36-7-II-2**  
**SITE 36-7, PHASE I AND PHASE II INVESTIGATIONS**  
**CHEMICAL ANALYSIS RESULTS**

SOURCE: HLA 1888

**Prepared for:**  
**U.S. Army Program Manager's Office**  
**For Rocky Mountain Arsenal**

Dieldrin was detected in the 0- to 1-ft sample interval from Boring 3703 at a concentration of 4 ppm. This boring was located adjacent to the northwest corner of the Shell incinerator. Dieldrin was also detected in Boring 3708 (0.5 ppm, 0- to 1-ft interval) and Boring 3709 (0.4 ppm, 0- to 1-ft interval). Boring 3708 is located at the intersection of the entrance to the incinerator, and Boring 3709 is in the fill area within Anomaly G.

The organosulphur compounds CPMS and CPMSO were detected at concentrations of 8 ppm and 4 ppm, respectively, in the 4- to 5-ft sample interval of Boring 3691. Four samples obtained at depths greater than 7 ft contained CPMSO<sub>2</sub> at concentrations ranging from 0.7 to 2 ppm. Three of these samples were collected below the base of suspected disposal trenches.

Of the ICP metals, cadmium, copper, lead, and zinc were detected in 1, 14, 5, and 15 samples, respectively, at concentrations within or above their indicator ranges. High concentrations of zinc, copper, and lead were detected in samples obtained from four pit borings (3684, 3688, 3689, and 3690) located in Anomaly B. With the exception of one lead and one zinc value, all of the ICP metal values within or above indicator ranges are associated with the grab samples of trench material or bedrock samples from the pit borings.

Seven of the 56 samples analyzed for arsenic were within or above the indicator range. Arsenic concentrations were in the middle of the indicator range, except Boring 3694 (0 to 1 ft) which contained arsenic at 15 ppm. Mercury was detected in 14 of 56 samples at concentrations ranging from 0.054 to 2.1 ppm. Higher mercury values are generally associated with samples obtained from the pit borings.

Grab samples from various depth intervals (see Table 36-7-II-3) were analyzed for TDGCL, IMPA, FC2A, and MPA. FC2A was detected in grab samples obtained from Pit Boring 3685 (7- to 8-ft interval) and Pit Boring 3690 (4- to 5-ft interval) at concentrations of 15.2 and 2.9 ppm, respectively.

The data reporting procedures as described in the Laboratory Quality Assurance Plan for RMA (ESE, 1985, Appendix B, RIC#85127R07) require that all analyses on a sample be completed within their respective holding time and that analytical results be corrected for percent recovery and moisture content. During routine sample analysis, analytical results must either fall within or be diluted within the Certified Range provided that holding times have not expired.

During laboratory certification, an analytical method is tested over a certain concentration range to determine the Certified Range. A typical tested concentration range would be 0, 0.5X, 1.0X, 2.0X, 5.0X, and 10.0X, where X is the Target Reporting Limit (TRL). The Certified Reporting Limit (CRL) is determined by comparing the target and actual concentrations of the tested range. The upper Certified Range is the higher target concentration achieved.

If a sample analysis indicates that the sample was not diluted adequately to be within the Certified Range, the result is reported as greater than (>) the upper Certified Range times any dilution factors. If a sample has exceeded its holding time and the result is greater than the Certified Range, the result is reported as greater than the upper Certified Range. If holding times are exceeded in attempting to dilute the sample until all results are within the Certified Range, results that are not identified above the Certified Range but that may be present at concentrations above the certified detection limit are reported as the detection limit times the dilution factor.

Several compounds detected by GC/MS were not included in the target compound list and were not conclusively identified. These compounds are included in the data presented in Appendix 36-7-II-B. Table 36-7-II-4 summarizes nontarget compounds detected at Site 36-7. It should be noted that an individual compound may have more than one retention time and that a particular retention time may be assigned to more than one compound. Table 36-7-II-4, therefore, provides only a general indication of additional compounds that may be present.

Table 36-7-1-4. Tentative identification of Nontarget Compounds in Site 36-7

Boring Number	Interval Depth (ft)	Unknown Number	Concentration Above Background (ppm)*	Sample Number	Lot	Best Fit	Comments
3683	5-6	526 614	10 3	36-7-47X2	KX1	Methylhexane	d
9-10	526 614	10 4	36-7-47X3	KX1	Dibutyl nonanedi oate Methylhexanone	d	
3684	2-3	587 588 593	0.9 1 2	36-7-47X5	KES	Unknown Acetylhydroxymethylpyridinone	a,f
10-11	524 549	8 0.9	36-7-47X6	KXG	Methyl hexanone Pentanoic acid	a,f	
14-15	554 558 566 586 598 160	1 1 1 2 2 9	36-7-47X7	KZQ KXG	Unknown Nonanoic acid Dodecanoic acid Tetradecanoic acid Hexamethylcyclotri siloxane Methylhexanone	a,a	
	524 558 566 586 598 615	8 0.9 1 1 1 2			Unknown Nonanoic acid Dodecanoic acid Tetradecanoic acid Dibutyl nonanedi oate	d,d	
3685	7-8	543 559 566 573	1 2 0.9 0.9	36-7-47X9	KES	Unknown Octanoic acid Nonanoic acid Decanoic acid Trichlorobenzeneamine	a,d,f
	576 578 588 598 615 622	10 10 2 3 2 1			Unknown Unknown 2-Chlorophosphate ethanol (3:1) Unknown alkane Unknown alkane	a,d,f	
	624 626 628 631 632 634	1 1 4 4 2 1			Unknown Di octyl hexanedi oate Unknown alkane Bis (2-ethylhexyl) phthalate Unknown alkane	a,c	
	636 640 644 649 655	1 1 1 2 2			Unknown alkane Unknown alkane Unknown alkane Unknown alkane	a,a,a,a	

Table 36-7-11-4. Tentative Identification of Nontarget Compounds in Site 36-7 Phase II Soil Samples (page 2 of 4)

Boring Number	Interval Depth (ft)	Unknown Number	Concentration Above Background (ppm)*	Sample Number	Lot	Best Fit	Comments
	10-11	526	10	36-7-47X10	KX1	Methylhexane	
		614	2	36-7-47X12	KX1	Di butyl nonanedioate	d
	15-16	526	10			Methylhexane	
		614	3			Di butyl nonanedioate	d
3686	6-7	576	2	36-7-47X13	KET	Trichlorobenzene	
		577	2			Junipene	
		594	0.8			Unknown alkane	a,f
		602	1			Phenylethylphenol	
		629	0.9			Unknown	
		630	7			Methylsulfuryldinitrodi(propylbenzenamine	
		636	1			Unknown	
	637	526	3	36-7-47X14	KX1	Methylhexane	a
		636	10			Di butyl nonanedioate	a
		641	3	36-7-47X15	KZ0	Hexamethylcyclotrisiloxane	d
	10-11	160	3			Methylhexane	i
		526	10			Hexamethylcyclotrisiloxane	
	14-15	160	20	36-7-47X18	KX1	Methylhexane	
		526	0.8	36-7-47X19	KZ0	Hexamethylcyclotrisiloxane	i,f
3687	17-18	526	20			Methylhexane	
	21-22	160	10			Hexamethylcyclotrisiloxane	
		526	2			Methylhexane	a
		555	2			Unknown	a
		556	1			Unknown	a
3688	5-6	600	0.8	36-7-47X17	KET	Unknown alkane	
		630	0.8	36-7-47X103	KXG	2-Ethylhexyl diphenyl phosphonate	a,f
	9-10	550	8			Unknown	f
		554	6			Unknown	a
		572	40			Trichlorophenol	
		626	10			Ethyhexyl trichlorophenoxyethanoate	
		627	400			Ethyhexyl trichlorophenoxyethanoate	
		628	40			Ethyhexyl trichlorophenoxyethanoate	
		629	20			Ethyhexyl trichlorophenoxyethanoate	
		630	200			Ethyhexyl trichlorophenoxyethanoate	
		631	600			Ethyhexyl trichlorophenoxyethanoate	
		632	100			Ethyhexyl trichlorophenoxyethanoate	
		633	20			Ethyhexyl trichlorophenoxyethanoate	
		634	20			Ethyhexyl trichlorophenoxyethanoate	
	13-14	160	6	36-7-47X104	KZQ	Hexamethylcyclotrisiloxane	i
		524	6			Methylhexane	
		566	1			Nonanoic acid	d
		586	1			Dodecanoic acid	d,f
		614	0.9			Di butyl nonanedioate	

Table 36-7-11-4. Tentative Identification of Nontarget Compounds in Site 36-7 Phase II Soil Samples (page 3 of 4)

Boring Number	Interval Depth (ft.)	Unknown Number	Above Background (ppm)*	Concentration Number	Sample Number	Lot	Best Fit	Comments
3689	3-4	582 598 617 618 624 628 632 633 636 640	4 1 2 0.8 1 1 1 0.9 1 1	36-7-47X21	KET	Dihydroacenaphthylene Unknown	a	
						Pyrene	f	
						Phenylnaphthalene	a	
						Unknown alkane	a	
						Unknown alkane	a	
						Unknown alkane	a	
						Triphenylene	f	
						Unknown alkane	a	
						Unknown alkane	a	
						Unknown alkane	a	
						Unknown alkane	a	
11-12	524	10	36-7-47X22	KXG	Methyl hexane			
15-16	632 161	2 3	36-7-47X23	KZQ KXG	Methylsulfonyldinitrodi(propylbenzenamine) Hexamethyltrisiloxane	i		
	524	9			Methylhexanone			
	541	1			Unknown		a	
	614	0.9			Diethyl nonanedioate		d,f	
	636	3			Bis (2-ethylhexyl) phthalate		c	
3690	4-5	551 576 578 591 594 595 600 10-11 14-15	0.9 7 6 0.9 2 3 2 9 9 0.9	36-7-47X25	KET	Heptanoic acid Trichlorobenzenamine	d,f	
					Unknown		a	
					Unknown alkane		a,f	
					Unknown alkane		a	
					Unknown alkane		a	
					Unknown alkane		a	
					Methylhexanone			
					Methylhexanone			
					Diethyl nonanedioate		d	
3691	0-1	526	9	36-7-47X29	KXI	Methylhexanone		
3694	0-1	518 524 566 586 661 4-5	1 8 0.8 0.7 0.8 8	36-7-47X41	KXG	Tetrachloroethene Methylhexanone Nonanoic acid Dodecanoic acid Unknown alkane	d,f d,f a,f	
					Methylhexanone			
					Unknown		a,f	
					Butyl octadecanoate		d,f	
					Unknown		a,f	
					Methylhexanone			
3696	0-1	526 619 628 633 636	10 0.9 0.9 0.8 10	36-7-47X49 36-7-47X50	KXI KXI	Methylhexanone Unknown Butyl octadecanoate Unknown Methylhexanone	a,f d,f a,f	
3697	0-1 4-5	635 635	0.8 2	36-7-47X53 36-7-47X54	KXI KXI	Bis (2-ethylhexyl) phthalate Bis (2-ethylhexyl) phthalate	c,f c	

Table 36-7-11-4. Tentative Identification of Nontarget Compounds in Site 36-7 Phase II Soil Samples (page 4 of 4)

Boring Number	Interval Depth (ft)	Unknown Number	Above Background (ppm)*	Concentration Sample Number	Lot	Best Fit	Comments
3698	0-1	524	9	36-7-47X57	KXG	Methylhexanone	a,f
		558	0.8			Unknown	d
		566	1			Nonanoic acid	d,f
		586	0.9	36-7-47X58	KXG	Dodecanoic acid	
3700	0-1	524	8			Methylhexanone	
		636	1	36-7-47X65	KXC	Bis (2-ethylhexyl) phthalate	c
		523	0.9	36-7-47X71	KXC	Oxabicycloheptane	f
		616	3			Unknown	a
3703	0-1	632	2			Methylsulfonyldinitrodiisopropylbenzenamine	
		632	5			Unknown	
		673	5			Unknown	a
		636	2	36-7-47X73	KXC	Bis (2-ethylhexyl) phthalate	c
3704	0-1	637	0.9	36-7-47X75	KXC	Bis (2-ethylhexyl) phthalate	c,f
		615	1	36-7-47X77	KXC	Diethyl nonanedioate	d
		636	1			Bis (2-ethylhexyl) phthalate	c
		524	1	36-7-47X79	KXC	Methylhexanone	i
3705	0-1	160	1	36-7-47X81	KZN	Hexamethyltrisiloxane	a,c,f
		625	0.9			Unknown phthalate	a,c,f
		628	0.8			Unknown phthalate	c
		636	4			Bis (2-ethylhexyl) phthalate	
3706	0-1	636	0.8	36-7-47X85	KXF	Bis (2-ethylhexyl) phthalate	c,f
		160	6	36-7-47X86	KZN	Hexamethyltrisiloxane	i
		636	1			Bis (2-ethylhexyl) phthalate	c
		524	1				
3707	0-1 9-10	160	1				
		625	0.9				
		628	0.8				
		636	4				
3708	4-5 9-10	636	0.8	36-7-47X89	KXE	Bis (2-ethylhexyl) phthalate	c,f
		160	6				i
		636	1				
		636	0.9	36-7-47X91	KXE	Diethyl hexanedi oate	c
3709	0-1 9-10	630	3			Diethyl hexanedi oate	d
		636	8				d,f
		615	0.9				
		615	0.9				

\* Values reported are method blank corrected.

+ a. No positive identification.

b. Surfactant.

c. Plasticizer (Note: All phthalates and adipates will have this comment).

d. Derived from natural products.

e. Suspected laboratory contaminant.

f. Low concentration.

g. Low frequency of occurrence.

h. Ubiquitous.

i. Possible column bleed.

j. None detected.

Source: ESE, 1986.

Nontarget compounds were detected in 42 of the 56 samples analyzed by GC/MS. Methyl hexanone was tentatively identified in 23 samples from Lots KXI, KXG, and KXC at concentrations ranging from 1 to 20 ppm. Hexamethyltrisiloxane, which was identified in 7 of 11 samples analyzed by GC/MS for VO compounds, is associated with column bleed during laboratory procedures.

Trichlorobenzenamine and methylsulfonyldinitrodipropylbenzenamine were each tentatively identified in three samples. The grab sample (6 to 7 ft) from Boring 3686 contained phenyethylphenol (2 ppm) and junipene (1 ppm) in addition to trichlorobenzene and methylsulfonyldinitrodipropylbenzenamine. Boring 3688 (9 to 10 ft) contained trichlorophenol and ethylhexyl trichlorophenoxy-ethanoate at elevated concentrations ranging from 10 to 600 ppm. Pyrene, triphenylene, and two naphthalenes were discovered in Boring 3689 (3 to 4 ft). The remaining comounds were predominantly naturally occurring compounds, phthalates, or could not be conclusively identified.

Results of the Phase II sampling program at Site 36-7 will be included as part of the overall analysis of the Central Study Area Report.

## 5.0 REFERENCES

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APPENDIX 36-7-II-A  
CHEMICAL NAMES, METHODS, AND ABBREVIATIONS

**APPENDIX 36-7-II-A**  
**CHEMICAL NAMES, METHODS, AND ABBREVIATIONS**

**PHASE I ANALYTES AND CERTIFIED METHODS**

<u>Analytes/Methods</u>	<u>Synonymous Names and Abbreviations</u>	<u>Standard Abbreviations</u>
VOLATILE ORGANIC COMPOUNDS/GCMS	VOL	VO
1,1-Dichloroethane	1,1-Dichloroethane	11DCLE
1,2-Dichloroethane	1,2-Dichloroethane	12DCLE
1,1,1-Trichloroethane (TCA)	1,1,1-Trichloroethane	111TCE
1,1,2-Trichloroethane	1,1,2-Trichloroethane	112TCE
Benzene	Benzene	C <sub>6</sub> H <sub>6</sub>
Bicycloheptadiene	Bicycloheptadiene (BCHD)	BCHPD
Carbon tetrachloride	Carbon tetrachloride	CCL <sub>4</sub>
Chlorobenzene	Chlorobenzene	CLC <sub>6</sub> H <sub>5</sub>
Chloroform	Chloroform	CHCl <sub>3</sub>
Dibromochloropropane	Dibromochloropropane	DBCP
Dicyclopentadiene	Dicyclopentadiene	DCPD
Dimethyldisulfide	Dimethyldisulfide	DMDS
Ethylbenzene	Ethylbenzene	ETC <sub>6</sub> H <sub>5</sub>
m-Xylene	meta-Xylene	13DMB
Methylene chloride	Methylene chloride	CH <sub>2</sub> Cl <sub>2</sub>
Methylisobutyl ketone	Methylisobutyl ketone	MIBK
o,p-Xylene	ortho- and/or para-Xylene	XYLEN
Tetrachloroethene (PCE)	Tetrachloroethylene	TCLEE
Toluene	Toluene	MEC <sub>6</sub> H <sub>5</sub>
Trans 1,2-dichloroethene	Trans 1,2-dichloroethylene	12DCE
Trichloroethene (TCE)	Trichloroethylene	TRCLE
SEMIVOLATILE ORGANIC COMPOUNDS/GCMS	EXTRACTABLE ORGANIC COMPOUNDS (EX)	SVO
1,4-Oxathiane	1,4-Oxathiane	OXAT
2,2-Bis (para-chlorophenyl)- 1,1-dichloroethane	Dichlorodiphenylethane	PPDDE
2,2-Bis (para-chlorophenyl) 1,1,1-trichloroethane	Dichlorodiphenyltrichloroethane	PPDDT
Aldrin	Aldrin	ALDRN
Atrazine	Atrazine	ATZ
Chlordane	Chlordane	CLDAN
Chlorophenylmethyl sulfide	p-Chlorophenylmethyl sulfide	CPMS
Chlorophenylmethyl sulfoxide	p-Chlorophenylmethyl sulfoxide	CPMSO
Chlorophenylmethyl sulfone	p-Chlorophenylmethyl sulfone	CPMSO <sub>2</sub>
Dibromochloropropane	Dibromochloropropane	DBCP
Dicyclopentadiene	Dicyclopentadiene	DCPD
Dieldrin	Dieldrin	DLDRN
Diisopropylmethyl phosphonate	Diisopropylmethyl phosphonate	DIMP

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**APPENDIX 36-7-II-A**  
**CHEMICAL NAMES, METHODS, AND ABBREVIATIONS**

Analytes/Methods	Synonymous Names and Abbreviations	Standard Abbreviations
<b>SEMIVOLATILE ORGANIC COMPOUNDS (CONT)</b>		
Dimethylmethyl phosphonate	Dimethylmethyl phosphonate	DMMP
Dithiane	Dithiane	DITH
Endrin	Endrin	ENDRN
Hexachlorocyclopentadiene	Hexachlorocyclopentadiene (HCPD)	CL <sub>6</sub> CP
Isodrin	Isodrin	ISODR
Malathion	Malathion	MLTHN
Parathion	Parathion	PRTHN
Supona	2-Chloro-1(2,4-dichlorophenyl) vinyldiethyl phosphate	SUPONA
Vapona	Vapona	DDVP
<b>METALS/ICP</b>		
Cadmium	ICAP	ICP
Chromium	Cadmium	CD
Copper	Chromium	CR
Lead	Copper	CU
Zinc	Lead	PB
Zinc	Zinc	ZN
<b>SEPARATE ANALYSES</b>		
Arsenic/AA	Arsenic	AS
Mercury/AA	Mercury	HG
Dibromochloropropane/GC	Dibromochloropropane	DBCP

**APPENDIX 36-7-II-A**  
**CHEMICAL NAMES, METHODS, AND ABBREVIATIONS**

**PHASE II ANALYTES AND CERTIFIED METHODS**

<u>Analytes/Methods</u>	<u>Synonymous Names and Abbreviations</u>	<u>Standard Abbreviations</u>
VOLATILE ORGANIC COMPOUNDS/GCMS (Same as Phase I)	VOL	VO
SEMOVOLATILE ORGANIC COMPOUNDS/GCMS (Same as Phase I)	EXTRACTABLE ORGANIC COMPOUNDS (EX)	SVO
VOLATILE HALOCARBON COMPOUNDS/GCCON 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene 1,1,1-Trichloroethane (TCA) 1,1,2-Trichloroethane Carbon tetrachloride Chlorobenzene Chloroform Methylene chloride Trans 1,2-dichloroethylene Tetrachloroethene (PCE) Trichloroethene (TCE)	PURGEABLE HALOCARBONS (PHC) 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Carbon tetrachloride Chlorobenzene Chloroform Methylene chloride Trans 1,2-dichloroethene Tetrachloroethylene Trichloroethylene	VHO 11DCLE 12DCLE 11DCE 111TCE 112TCE CCL <sub>4</sub> CLC <sub>6</sub> H <sub>5</sub> CHCl <sub>3</sub> CH <sub>2</sub> Cl <sub>2</sub> 12DCE TCLEE TRCLE
VOLATILE HYDROCARBON COMPOUNDS/GCFID Bicycloheptadiene Dicyclopentadiene Methylisobutyl ketone	DCPD Bicycloheptadiene (BCHD) Dicyclopentadiene Methylisobutyl ketone	HYDCBN BCHPD DCPD MIBK
VOLATILE AROMATIC COMPOUNDS/GCPID Benzene Ethylbenzene m-Xylene o,p-Xylene Toluene	PURGEABLE AROMATICS (PAM) Benzene Ethylbenzene meta-Xylene ortho- and/or para-Xylene Toluene	VAO C <sub>6</sub> H <sub>6</sub> ETC <sub>6</sub> H <sub>5</sub> 13DMB XYLEN MEC <sub>6</sub> H <sub>5</sub>
ORGANOCHLORINE PESTICIDES/GCEC 2,2-Bis (para-chlorophenyl)- 1,1-dichloroethane 2,2-Bis (para-chlorophenyl)- 1,1,1-trichloreoethane Aldrin Chlordane Dieldrin Endrin Hexachlorocyclopentadiene Isodrin	Dichlorodiphenylethane Dichlorodiphenyltrichloroethane Aldrin Chlordane Dieldrin Endrin Hexachlorocyclopentadiene Isodrin	OCP PPDDE PPDDT ALDRN CLDAN DLDRN ENDRN CL <sub>6</sub> CP ISODR

**APPENDIX 36-7-II-A**  
**CHEMICAL NAMES, METHODS, AND ABBREVIATIONS**

<u>Analytes/Methods</u>	<u>Synonymous Names and Abbreviations</u>	<u>Standard Abbreviations</u>
ORGANOPHOSPHOROUS PESTICIDES/GCNPD	ORGANOPHOSPHOROUS COMPOUNDS (OPC)	OPP
Atrazine	Atrazine	ATZ
Malathion	Malathion	MLTHN
Parathion	Parathion	PRTHN
Supona	2-Chloro-1(2,4-dichlorophenyl) vinyldiethyl phosphate	SUPONA
Vapona	Vapona	DDVP
ORGANOPHOSPHOROUS COMPOUNDS/GCFPD	DIMP	OPC
Diisopropylmethyl phosphonate	Diisopropylmethyl phosphonate	DIMP
Dimethylmethyl phosphonate	Dimethylmethyl phosphonate	DMMP
ORGANOSULPHUR COMPOUNDS/GCFPD		OSC
1,4-Oxathiane	1,4-Oxathiane	OXAT
Benzothiazole	Benzothiazole	BTZ
Chlorophenylmethyl sulfide	p-Chlorophenylmethyl sulfide	CPMS
Chlorophenylmethyl sulfone	p-Chlorophenylmethyl sulfone	CPMSO <sub>2</sub>
Chlorophenylmethyl sulfoxide	p-Chlorophenylmethyl sulfoxide	CPMSO
Dimethyldisulfide	Dimethyldisulfide	DMDS
Dithiane	Dithiane	DITH
METALS/ICP	ICAP	ICP
Cadmium	Cadmium	CD
Chromium	Chromium	CR
Copper	Copper	CU
Lead	Lead	PB
Zinc	Zinc	ZN
SEPARATE ANALYSES		
Arsenic/AA	Arsenic	AS
Mercury/AA	Mercury	HG
Dibromochloropropane/GC	Dibromochloropropane	DBCP

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**APPENDIX 36-7-II-A**  
**CHEMICAL NAMES, METHODS, AND ABBREVIATIONS**

<u>Analytes/Methods</u>	<u>Synonymous Names and Abbreviations</u>	<u>Standard Abbreviations</u>
ARMY AGENT DEGRADATION PRODUCTS:		ADP
AGENT PRODUCTS/HPLC	TDGCL	
Chloroacetic Acid	Chloroacetic acid	CLC2A
Thiodiglycol	Thiodiglycol (TDG)	TDGCL
AGENT PRODUCTS/IONCHROM	IMPA	GBDP
Fluoroacetic acid	Fluoroacetic acid	FC2A
Isopropylmethylphosphonic acid	Isopropylmethylphosphonate	IMPA
Methylphosphonic acid	Methylphosphonate	MPA
 <b>Methods</b>		<b>Abbreviations</b>
Atomic Absorption Spectroscopy		AA
Gas Chromatography/Conductivity Detector		GCCON
Gas Chromatography/Electron Capture		GCEC
Gas Chromatography/Flame Ionization Detector		GCFID
Gas Chromatography/Flame Photometric		GCFPD
Gas Chromatography/Mass Spectrometry		GCMS
Gas Chromatography/Nitrogen Phosphorous Detector		GCNPD
Gas Chromatography/Photoionization Detector		GCPID
High Performance Liquid Chromatography		HPLC
Inductively Coupled Argon Plasma		ICP, ICAP
Ion Chromatography		IONCHROM

APPENDIX 36-7-II-B  
PHASE II CHEMICAL DATA

ENVIRONMENTAL SCIENCE & ENGINEERING  
PROJECT NUMBER 88445 0000  
FIELD GROUP 36-7-47  
ALL

06/24/88  
PROJECT NAME PMA TASK 47-1  
PROJECT MANAGER BILL FRASER  
LAB COORDINATOR JOE VONDRICK

PAGE #1

ENVIRONMENTAL SCIENCE & ENGINEERING				06/24/88	PROJECT NAME RMA TASK 47/1	PAGE #2
PROJECT NUMBER 88425 00100 FIELD GROUP 36-7-47 ALL				PROJECT MANAGER BILL FRASER LAB COORDINATOR JOE VONDRICK		
PARAMETERS	STOKE #	SAMPLE ID/#				
	METHOD	3683A	3684GRAB	3684A	3686GRAB	36E7A
DATE	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	3689GRAB
TIME	08:19	08:33	12:10	08:43	09:20	09:40
DIMP	98645	<0.50	<0.50	<0.50	<0.50	<0.50
1,4 DITHIANE	98650	<0.25	<0.25	<0.25	<0.25	<0.25
DMMMP	98657	<1.5	<1.5	<1.5	<1.5	<1.5
ENDRIN	98369	<0.70	1.4	<0.70	<0.70	<0.70
HEXACHLOROCYCLOPENTADIENE	98647	<1.1	<1.1	<1.1	<1.1	<1.1
ISODRIN	98649	<0.23	<0.33	<0.33	<0.33	<0.33
MALATHION	98648	<0.59	<0.59	<0.59	<0.59	<0.59
1,4 OXATHIANE	98644	<0.26	<0.26	<0.26	<0.26	<0.26
ETYL PARATHION	98658	<0.63	<0.63	<0.63	<0.63	<0.63
SUPONA	98656	<0.49	<0.49	<0.49	<0.49	<0.49
VAPONA	98646	<0.25	<0.25	<0.25	<0.25	<0.25
DICYCLOPENTADIENE	98651	<0.27	<0.27	<0.27	<0.27	<0.27
TRANS-1,2-DICHLOROETHENE	98687	<0.25	<0.25	<0.25	<0.25	<0.25
HENE	98688	<0.25	<0.25	<0.25	<0.25	<0.25
ETHYLBENZENE	98689	<0.25	<0.97	<0.25	<0.25	<0.25
METHYLENE CHLORIDE	98690	<0.25	<0.25	<0.25	<0.25	<0.25
TETRACHLOROETHENE	98691	<0.25	<0.25	<0.25	<0.25	<0.25
TOLUENE	98692	<0.25	<0.25	<0.25	<0.25	<0.25
1,1,1-TRICHLOROETHANE	98693	<0.25	<0.25	<0.25	<0.25	<0.25
1,1,2-TRICHLOROETHANE	98694	<0.25	<0.25	<0.25	<0.25	<0.25
M-XYLENE	98695	<0.25	<0.25	<0.25	<0.25	<0.25
MIBK	98696	<0.50	<0.50	<0.50	<0.50	<0.50
DMS	98697	<0.25	<0.25	<0.25	<0.25	<0.25
BENZENE	98698	<0.25	<0.25	<0.25	<0.25	<0.25

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ENVIRONMENTAL SCIENCE &amp; ENGINEERING

06/24/88

PROJECT NAME PMA TASK 47/1

PROJECT NUMBER 88425 0000

PROJECT MANAGER BILL FRASER

FIELD GROUP 36-7-17

LAB COORDINATOR JOE VONDPLA

ALL

PARAMETERS	UNITS	STOKE #	METHOD	DATE	TIME	3683A	3683B	3684A	3684B	3685A	3685X	3686CRAB	3686A	3686S	3686FA	3687A	3687B	
		36-7-47	36-7-47	03/15/88	08:19	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	
		2	3	08:33	12:10	36-7-47	5	6	7	9	10	12	13	14	15	17	19	
				08:19				03/15/88	02/03/88	03/16/88	02/02/88	03/15/88	02/02/88	03/14/88	02/03/88	03/14/88	02/03/88	
									08:43	08:54	12:22	09:20	10:12	10:57	09:54	10:22	12:48	
UNK600	UG/G	90600	Q9															0.8
UNK609	UG/G	90609	Q9															5
UNK618	UG/G	90618	Q9															2
UNK619	UG/G	90619	Q9															1
UNK626	UG/G	90626	Q9															0.8
UNK631	UG/G	90631	Q9															4
UNK633	UG/G	90633	Q9															2
UNK160	UG/G	90160	Q9															9
UNK615	UG/G	90615	W9															2
UNK543	UG/G	90543	Q9															1
UNK559	UG/G	90559	Q9															2
UNK573	UG/G	90573	Q9															0.9
UNK576	UG/G	90576	Q9															10
UNK578	UG/G	90578	Q9															10
UNK622	UG/G	90622	Q9															1
UNK624	UG/G	90624	Q9															0.9
UNK628	UG/G	90628	Q9															4
UNK632	UG/G	90632	Q9															2
UNK634	UG/G	90634	Q9															1
UNK636	UG/G	90636	Q9															1
UNK640	UG/G	90640	Q9															1.0
UNK644	UG/G	90644	Q9															1.0
UNK649	UG/G	90649	Q9															2
UNK655	UG/G	90655	Q9															2

ENVIRONMENTAL SCIENCE & ENGINEERING  
PROJECT NUMBER 68425 00000  
FIELD GROUP 36-7-47  
ALL

PARAMETERS	UNITS	STOKE # METHOD	DATE TIME	TIME	STORED # 36-7-47	3683A 36-7-47	3683B 36-7-47	3684A 36-7-47	3684B 36-7-47	3685CRAB 36-7-47	SAMPLE ID/# 3685A 36-7-47	3686A 36-7-47	3686CRAB 36-7-47	3686A 36-7-47	3686CRAB 36-7-47	3686A 36-7-47	3686CRAB 36-7-47	
UNK577	UG/G	90577	03/15/88 08:19	03/15/88 08:33	02/03/88 12:10	03/16/88 08:43	03/16/88 08:54	02/02/88 12:22	03/15/88 09:20	02/02/88 10:12	03/14/88 10:57	03/14/88 09:54	02/03/88 10:22	03/14/88 10:22	02/03/88 12:48	03/14/88 09:40	02/03/88 12:03	03/14/88 10:16
UNK594	UG/G	90594															0.8	
UNK629	UG/G	90629															0.9	
UNK630	UG/G	90630															0.8	
UNK637	UG/G	90637															0.9	
UNK555	UG/G	90555															2	
UNK556	UG/G	90556															2	
UNK582	UG/G	90582															2	
UNK617	UG/G	90617															2	
UNK161	UG/G	90161															1	
UNK541	UG/G	90541															4	
UNK551	UG/G	90551															2	
UNK591	UG/G	90591															1	
UNK595	UG/G	90595															1	
UNK518	UG/G	90518															1	
UNK611	UG/G	90661															1	
UNK673	UG/G	90673															1	
UNK523	UG/G	90523															1	
UNK550	UG/G	90550															1	
UNK616	UG/G	90616															1	
UNK572	UG/G	90572															1	
UNK627	UG/G	90627															1	
UNK526	UG/G	90526															1	
UNK614	UG/G	90614	3	4	1												1	







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 PROJECT NUMBER 88125 0000  
 FIELD GROUP 36-7-47  
 ALL

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PROJECT NAME RHA TASK 47/1  
 PROJECT MANAGER BILL FRASER  
 LAB COORDINATOR JOE VONDRIK

PARAMETERS	UNITS	STOKE # METHOD	DATE TIME	SAMPLE ID/#	36908	3691A	3691B	3692A	3692B	3693A	3693B	3694A	3694B	3695A
		3689CRAB	02/03/88 10:16	3689A 36-7-47	3689B 36-7-47	3690A 36-7-47	3690B 36-7-47	3691A 36-7-47	3691B 36-7-47	3692A 36-7-47	3692B 36-7-47	3693A 36-7-47	3693B 36-7-47	3694A 36-7-47
		21	10:43	22	23	25	26	27	29	30	33	34	37	38
UNK600	UG/G		90600											
UNK609	UG/G		90609		Q9									
UNK618	UG/G		90618		Q9									
UNK619	UG/G		90619		Q9									
UNK626	UG/G		90626		Q9									
UNK631	UG/G		90631		Q9									
UNK633	UG/G		90633		Q9									
UNK160	UG/G		90160		Q9									
UNK615	UG/G		90615		Q9									
UNK543	UG/G		90543		Q9									
UNK559	UG/G		90559		Q9									
UNK573	UG/G		90573		Q9									
UNK576	UG/G		90576		Q9									
UNK578	UG/G		90578		Q9									
UNK622	UG/G		90622		Q9									
UNK624	UG/G		90624		Q9									
UNK634	UG/G		90634		Q9									
UNK628	UG/G		90628		Q9									
UNK632	UG/G		90632		Q9									
UNK640	UG/G		90640		Q9									
UNK644	UG/G		90644		Q9									
UNK649	UG/G		90649		Q9									
UNK655	UG/G		90655		Q9									

		ENVIRONMENTAL SCIENCE & ENGINEERING		06/24/88		PROJECT NAME PMA TASA 47/1	
		PROJECT NUMBER 88425 0000		PROJECT MANAGER BILL FRASER		LAB COORDINATOR JOE VONDRECK	
		FIELD GROUP 36-7-47					
		ALL					
				SAMPLE ID/#			
PARAMETERS	UNITS	STORET #	3689CRAB	3689A	3689B	3690CRAB	3690A
		METHOD	36-7-47	36-7-47	36-7-47	36-7-47	3691A
			21	22	23	25	36-7-47
DATE	TIME		02/03/88	03/16/88	03/16/88	02/03/88	36-7-47
			10:16	10:43	10:55	11:22	36-7-47
UNK577			90577	Q9	Q9	Q9	3692A
UNK594			90594	Q9	Q9	Q9	36-7-47
UNK629			90629	Q9	Q9	Q9	36-7-47
UNK630			90630	Q9	Q9	Q9	36-7-47
UNK637			90637	Q9	Q9	Q9	36-7-47
UNK555			90555	Q9	Q9	Q9	36-7-47
UNK556			90556	Q9	Q9	Q9	36-7-47
UNK582			90582	Q9	Q9	Q9	36-7-47
UNK617			90617	Q9	Q9	Q9	36-7-47
UNK161			90161	Q9	Q9	Q9	36-7-47
UNK541			90541	Q9	Q9	Q9	36-7-47
UNK551			90551	Q9	Q9	Q9	36-7-47
UNK591			90591	Q9	Q9	Q9	36-7-47
UNK595			90595	Q9	Q9	Q9	36-7-47
UNK518			90518	Q9	Q9	Q9	36-7-47
UNK661			90661	Q9	Q9	Q9	36-7-47
UNK523			90523	Q9	Q9	Q9	36-7-47
UNK616			90616	Q9	Q9	Q9	36-7-47
UNK673			90673	Q9	Q9	Q9	36-7-47
UNK550			90550	Q9	Q9	Q9	36-7-47
UNK572			90572	Q9	Q9	Q9	36-7-47
UNK627			90627	Q9	Q9	Q9	36-7-47
UNK526			90526	Q9	Q9	Q9	36-7-47
UNK614			90614	Q9	Q9	Q9	36-7-47

ENVIRONMENTAL SCIENCE & ENGINEERING  
PROJECT NUMBER: 88425 0100  
FIELD GROUP: 36-7-47  
ALL

06/24/88  
PROJECT NAME: EMIA TASK 47/1  
PROJECT MANAGER: BILL FRASER  
LAB COORDINATOR: JOE VONDRICK

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UNK 635 90635 100/20



ENVIRONMENTAL SCIENCE & ENGINEERING  
PROJECT NUMBER 88425 0000  
FIELD GROUP 36-7-47  
ALL  
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06/24/88  
PROJECT NAME PMA TASK 47/1  
PROJECT MANAGER BILL FRASER  
LAB COORDINATOR JOE VONDRIK

PARAMETERS		STORET #	DATE	TIME	UNITS	METHOD	SAMPLE ID/#	36958	36964	36968	36974	36978	36984	36988	36994	36998	37004	37014	37024	37034	37044	37054	
DATE	36-7-47	36-7-47	03/15/88	03/14/88	03/15/88	UG/G-DRY	03/15/88	36958	36964	36968	36974	36978	36984	36988	36994	36998	37004	37014	37024	37034	37044	37054	
TIME	11:45	08:40	08:40	08:52	12:53	12:53	08:40	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	
IMP.	<0.50	<0.50	<0.50	<0.50	<0.50	UG/G-DRY	<0.50	98645	98650	98657	98664	98669	98674	98681	98687	98694	98701	98708	98715	98722	98729	98736	98743
DITHIANE	,4	0.25	0.25	0.25	0.25	UG/C-DRY	0.25	98650	98657	98664	98671	98678	98684	98691	98698	98705	98712	98719	98726	98733	98740	98747	98754
MMPP						UG/G-DRY		98657	98664	98671	98678	98685	98692	98699	98706	98713	98720	98727	98734	98741	98748	98755	
NDRIN						UG/G-DRY		98664	98671	98678	98685	98692	98699	98706	98713	98720	98727	98734	98741	98748	98755	98762	
HEXACHLOROCYCLOPENTADIENE						UG/G-DRY		98671	98678	98685	98692	98699	98706	98713	98720	98727	98734	98741	98748	98755	98762	98769	
SODRIN						UG/G-DRY		98678	98685	98692	98699	98706	98713	98720	98727	98734	98741	98748	98755	98762	98769	98776	
HALATHION						UG/G-DRY		98685	98692	98699	98706	98713	98720	98727	98734	98741	98748	98755	98762	98769	98776	98783	
1,4 OXATHIANE						UG/G-DRY		98692	98699	98706	98713	98720	98727	98734	98741	98748	98755	98762	98769	98776	98783	98790	
PYRATHION						UG/G-DRY		98706	98713	98720	98727	98734	98741	98748	98755	98762	98769	98776	98783	98790	98797	98804	
SUPONA						UG/G-DRY		98713	98720	98727	98734	98741	98748	98755	98762	98769	98776	98783	98790	98797	98804	98811	
VAPONA						UG/G-DRY		98720	98727	98734	98741	98748	98755	98762	98769	98776	98783	98790	98797	98804	98811	98818	

PARAMETERS	UNITS	STCET #	METHOD	DATE	TIME	SAMPLE ID/#	3698B	3699A	3700A	3701A	3702A	3703A	3704A
CARBON TETRACHLORIDE	UG/G-DRY	3695B	3696A	03/15/88	03:14/88	3697A	3697B	3698A	3699B	3700A	3701A	3702A	3703A
CHLOROBENZENE	UG/G-DRY	36-7-47	36-7-47	03/15/88	08:40	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47
CHLOROFORM	UG/G-DRY	46	49	03/15/88	08:52	50	53	54	57	58	61	62	65
1,1-DICHLOROETHANE	UG/G-DRY	11:45	12:53	03/15/88	08:52	12:53	13:00	12:30	12:40	12:15	12:23	09:14	09:24
O-ANIS/OR P-XYLENE	UG/G-DRY	98700											
CARBON TETRACHLORIDE	UG/G-DRY	98680											
CHLOROBENZENE	UG/G-DRY	98681											
CHLOROFORM	UG/G-DRY	98682											
1,1-DICHLOROETHANE	UG/G-DRY	98683											
1,2-DICHLOROETHANE	UG/G-DRY	98684											
BICYCLOHEPTADIENE	UG/G-DRY	98686											
DBCP (NEMAGON)	UG/G-DRY	98652											
THIODIGLYCOL	UG/G-DRY	99798											
CHLOROACETIC ACID	UG/G	MM9											
IMPA	UG/G	97385											
FLUOROACETIC ACID	UG/G	97382											
MPA	UG/G	97383											
UNK587	UG/G	90587											
UNK588	UG/G	90588											
UNK593	UG/G	90593											
UNK602	UG/G	90602											
UNK524	UG/G	90524											
UNK549	UG/G	90549											
UNK554	UG/G	90554											
UNK558	UG/G	90558											0.8
UNK566	UG/G	90566											1
UNK586	UG/G	90586											0.9
UNK598	UG/G	90598											0.9

ENVIRONMENTAL SCIENCE & ENGINEERING			06/24/88	PROJECT NAME	PMMA TASK 47/1	PAGE # 16										
PROJECT NUMBER 88425 00000				PROJECT MANAGER BILL FRASER												
FIELD GROUP 36-7-47				LAB COORDINATOR JOE VONDRIK												
ALL																
PARAMETERS	STOKE #	365958	3696A	3696B	3697A	3697B	3698A	3698B	3699A	3699B	3700A	3701A	3702A	3703A	3704A	3705A
	HE/THD	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47
DATE	03/15/88	03/14/88	03/14/88	03/15/88	03/15/88	03/15/88	03/15/88	03/15/88	03/15/88	03/15/88	03/15/88	03/15/88	03/15/88	03/15/88	03/15/88	03/15/88
TIME	11:45	08:40	08:52	12:53	13:00	12:30	12:40	12:40	12:15	12:23	09:14	09:24	09:24	09:24	09:24	09:24
UNK600	UG/G	90600	Q9													
UNK609	UG/G	90609	Q9													
UNK618	UG/G	90618	Q9													
UNK619	UG/G	90619	Q9													
UNK626	UG/G	90626	Q9													
UNK631	UG/G	90631	Q9													
UNK633	UG/G	90633	Q9													
UNK160	UG/G	90160	Q9													
UNK615	UG/G	90615	W9													
UNK543	UG/G	90543	Q9													
UNK576	UG/G	90576	Q9													
UNK559	UG/G	90559	Q9													
UNK573	UG/G	90573	Q9													
UNK578	UG/G	90578	Q9													
UNK622	UG/S	90622	Q9													
UNK624	UG/G	90624	Q9													
UNK628	UG/G	90628	Q9													
UNK632	UG/G	90632	Q9													
UNK634	UG/G	90634	Q9													
UNK644	UG/G	90644	Q9													
UNK649	UG/G	90649	Q9													
UNK655	UG/G	90655	Q9													

PARAMETERS	UNITS	STORET #	METHOD	3695B 36-7-47	3696A 36-7-47	3696B 36-7-47	3697A 36-7-47	3697B 36-7-47	SAMPLE ID/#	3698B 36-7-47	3699A 36-7-47	3699B 36-7-47	3700A 36-7-47	3702A 36-7-47	3703A 36-7-47	3704A 36-7-47	
DATE		03/15/88	03/14/88	03/14/88	03/15/88	03/15/88	03/15/88	03/16/88	03/16/88	03/15/88	03/15/88	03/15/88	03/09/88	03/09/88	03/09/88	03/09/88	
TIME		11:45	08:40	08:52	12:53	13:00	12:30	12:40	12:15	12:23	09:14	09:24	09:34	09:46	09:54	10:02	
UNK577	UG/G	90577		09													
UNK594	UG/G	90594		Q9													
UNK629	UG/G	90629		Q9													
UNK630	UG/G	90630		Q9													
UNK637	UG/G	90637		Q9													
UNK555	UG/G	90555		Q9													
UNK556	UG/G	90556		Q9													
UNK582	UG/G	90582		Q9													
UNK617	UG/G	90617		Q9													
UNK161	UG/G	90161		Q9													
UNK541	UG/G	90541		Q9													
UNK551	UG/G	90551		Q9													
UNK591	UG/G	90591		Q9													
UNK595	UG/G	90595		Q9													
UNK518	UG/G	90518		Q9													
UNK661	UG/G	90661		Q9													
UNK673	UG/G	90673		Q9													
UNK523	UG/G	90523		Q9													
UNK550	UG/G	90550		Q9													
UNK572	UG/G	90572		Q9													
UNK627	UG/C	90627		Q9													
UNK526	UG/G	90526		Q9													
UNK614	UG/G	90614		Q9													





ENVIRONMENTAL SCIENCE & ENGINEERING			06/24/88	PROJECT NAME RMA TASK 47/1	PROJECT NUMBER 88425 0000	FIELD GROUP 36-7-47	ALL	SAMPLE ID/#	RMA TASK 47/1	PROJECT MANAGER BILL FRASER	LAB COORDINATOR JOE VONDICK	PAGE#20
PARAMETERS	STORET #	3706A	3707A	3707B	3707C	3708A	3708B	3708C	3709A	3709B	3709C	3710A
DATE	TIME	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	3711A
DIMP	UNITS	METHOD	77	77	80	81	84	85	86	89	90	91
1.4 DITHIOLANE	UG/G-DRY	98645	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	36-7-47
DMMF	UG/G-DRY	98650	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47
ENDRIN	UG/G-DRY	98657	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	36-7-47
HEXAACHLOROCYCLOPENTADIENE	UG/G-DRY	98667	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	36-7-47
ISODRIN	UG/G-DRY	98669	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	36-7-47
HALATHION	UG/G-DRY	98674	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	36-7-47
1.4 OXATHIANE	UG/G-DRY	98674	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	36-7-47
ETYL'PARATHION	UG/G-DRY	98658	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	36-7-47
SUPONA	UG/G-DRY	98656	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	<0.49	36-7-47
VAPONA	UG/G-DRY	98646	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47
DICYCLOPENTADIENE	UG/G-DRY	98651	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	36-7-47
TRANS-1,2-DICHLOROETHENE	UG/G-DRY	98687	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47
EHTYLBENZENE	UG/G-DRY	98688	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47
METHYLENE CHLORIDE	UG/G-DRY	98689	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47
TETRACHLOROETHENE	UG/G-DRY	98690	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47
TOLUENE	UG/G-DRY	98691	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47
1,1,1-TRICHLOROETHANE	UG/G-DRY	98692	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47
ETHANE	UG/G-DRY	98693	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47
1,1,2-TRICHLOROETHANE	UG/G-DRY	98694	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47
M-XYLENE	UG/G-DRY	98695	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47
MIBK	UG/G-DRY	98696	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	36-7-47
DMDS	UG/G-DRY	98697	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47
BENZENE	UG/G-DRY	98699	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	36-7-47

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ENVIRONMENTAL SCIENCE & ENGINEERING  
PROJECT NUMBER 88445 06/00  
FIELD GROUP 36-7-47  
ALL  
06/24/88  
PROJECT NAME RMA TASK 47/1  
PROJECT MANAGER BILL FRASER  
LAB COORDINATOR JOE VONDRIK

O-AND/OR P-XYLENE	98700	<0.50	<0.50	<0.50
UG/G-DRY	W9	<0.25	<0.25	<0.25
CARBON TETRACHLORIDE	98680	<0.25	<0.25	<0.25
UG/G-DRY	W9	<0.25	<0.25	<0.25
CHLOROBENZENE	98681	<0.25	<0.25	<0.25
UG/G-DRY	W9	<0.25	<0.25	<0.25
CHLOROFORM	98682	<0.25	<0.25	<0.25
UG/G-DRY	W9	<0.25	<0.25	<0.25
1,1-DICHLOROETHANE	98683	<0.25	<0.25	<0.25
UG/G-DRY	W9	<0.28	<0.28	<0.28
1,2-DICHLOROETHANE	98684	<0.28	<0.28	<0.28
UG/G-DRY	W9	<0.25	<0.25	<0.25
BICYCLOHEPTADIENE	98686	<0.33	<0.33	<0.33
UG/G-DRY	W9	<0.33	<0.33	<0.33
DBCP (NEMAGON)	98652			



ENVIRONMENTAL SCIENCE & ENGINEERING				06/24/88	PROJECT NAME	PMA TASK #	PAGE #
PROJECT NUMBER 88125 0100						471	23
FIELD GROUP 36-7-47					PROJECT MANAGER BILL FRASER		
ALL					LAB COORDINATOR JOE VONDRICK		
PARAMETERS	UNITS	STORET #	METHOD	SAMPLE ID/#			
		36-7-47	36-7-47	3707A	3708B	3710A	3711A
		77	79	36-7-47	36-7-47	36-7-47	36-7-47
				80	81	84	86
DATE	TIME	03/09/88	10:10	03/10/88	03/10/88	03/10/88	03/10/88
			08:21	08:33	08:46	09:20	09:29
					09:46	10:20	10:30
UNK577	UG/G	90577				10:47	12:18
UNK594	UG/G		Q9				
UNK629	UG/G		90594				
UNK630	UG/G		Q9				
UNK637	UG/G		90629				
UNK555	UG/G		Q9				
UNK556	UG/G		90630				
UNK582	UG/G		Q9				
UNK617	UG/G		90637				
UNK161	UG/G		Q9				
UNK541	UG/G		90555				
UNK551	UG/G		90556				
UNK591	UG/G		90582				
UNK661	UG/G		90617				
UNK523	UG/G		Q9				
UNK550	UG/G		90161				
UNK518	UG/G		Q9				
UNK616	UG/G		90541				
UNK673	UG/G		Q9				
UNK526	UG/G		90551				
UNK14	UG/G		90595				
			90595				
			90518				
			90591				
			90616				
			90661				
			90673				
			90523				
			90550				
			90616				
			90572				
			90572				
			90627				
			90526				
			90614				
			Q9				

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ENVIRONMENTAL SCIENCE &amp; ENGINEERING

PROJECT NUMBER 86425 00000

FIELD GROUP 36-7-47

All

PROJECT NAME RMA TAG 47/1  
PROJECT MANAGER BILL FRASER  
LAB COORDINATOR JOE VONRICH

PARAMETERS	STORET #	STORET #	SAMPLE ID/#	3706A	3707A	3707B	3707C	3708A	3709B	3709C	3710A	3711A	3711B	3712A
UNITS	METHOD			36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47	36-7-47
DATE		03/09/86	03/10/86	03/10/86	03/10/86	03/10/86	03/10/86	03/10/86	03/10/86	03/10/86	03/10/86	03/10/86	03/10/86	03/10/86
TIME		10:10	08:21	08:33	08:46	09:20	09:29	09:46	10:20	10:30	10:47	11:18	13:22	12:49
UNK635	UG/6	90635	Q9											

ENVIRONMENTAL SCIENCE & ENGINEERING  
 PROJECT NUMBER 88425 0000  
 FIELD GROUP 36-7-47  
 ALL

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PARAMETERS	UNITS	STORET #	DATE	TIME	PROJECT NAME	06/24/88
SITE TYPE		METHOD	03/14/88	13:46	PROJECT MANAGER	BILL FRASER
SAMPLE DEPTH	FT		03/16/88	09:40	LAB COORDINATOR	JOE VONBICK
SAMPLING TECHNIQUE					SAMPLE ID/#	
INSTALLATION CODE						
MOISTURE	%WET WT					
CADMIUM	UG/G- DRY	R9	1028	<0.921	<0.921	<0.921
CHROMIUM	UG/G- DRY	R9	1043	9.00	11.4	40.5
COPPER	UG/G- DRY	R9	1052	<16.8	<16.8	<16.8
LEAD	UG/G- DRY	R9	1093	40.1	38.7	77.8
ZINC	UG/G- DRY	R9	1003	<4.70	<4.70	
ARSENIC	UG/G- DRY	T9		0.125	<0.050	
MERCURY	UG/G- DRY	V9				
ALDRIN	UG/G- DRY	Q9				
ATRAZINE	UG/G- DRY	Q9				
CHLORDANE	UG/G- DRY	Q9				
P-CLPHENYL METHY-	SULFIDE	Q9				
P-CLPHENYL METHY-	SULFOXIDE	Q9				
P-CLPHENYL METHY-	SULFONE	Q9				
DBCP (NEMAGON)	UG/G- DRY	Q9				
DICYCLOPENTADIENE	UG/G- DRY	Q9				
DDE,PP,	UG/G- DRY	Q9				
DDT,PP,	UG/G- DRY	Q9				
DIELDRIN	UG/G- DRY	Q9				
	UG/G- DRY	Q9				

ENVIRONMENTAL SCIENCE & ENGINEERING			06/24/88	PROJECT NAME RMA TASK 47/1	PROJECT NUMBER 68425 0000	FIELD GROUP 36-7-47	ALL	LAB COORDINATOR JOE VONDRICK	PAGE #26
PARAMETERS	UNITS	STOKE #	METHOD	36-7-47	3688A	3688B	36-7-47	104	SAMPLE ID/#
DATE TIME				03/14/88 13:46	03/16/88 09:40	03/16/88 09:51			
DIMP	UG/G-DRY	98645	Q9		<0.50	<0.50			
1,4 DITHIANE	UG/G-DRY	98650	Q9		<0.25	<0.25			
DMP	UG/G-DRY	98657	Q9		<1.5	<1.5			
ENDRIN	UG/G-DRY	98369	Q9		<0.70	<0.70			
HEXAChLOROCLOPENTADIENE	UG/G-DRY	98647	Q9		<1.1	<1.1			
ISODRIN	UG/G-DRY	98649	Q9		<0.33	<0.33			
MALATHION	UG/G-DRY	98648	Q9		<0.59	<0.59			
1,4 OXATHIANE	UG/G-DRY	98644	Q9		<0.26	<0.26			
ETY-PARATHION	UG/G-DRY	98658	Q9		<0.63	<0.63			
SUPONA	UG/G-DRY	98656	Q9		<0.49	<0.49			
VAPONA	UG/G-DRY	98646	Q9		<0.25	<0.25			
DICYCLOPENTADIENE	UG/G-DRY	98651	W9			<0.27			
TRANS-1,2-DICHLOROETHENE	UG/G-DRY	98687	W9			<0.25			
HENE	UG/G-DRY	98687	W9			<0.25			
ETHYLBENZENE	UG/G-DRY	98688	W9			<0.25			
ME THYLENE CHLORIDE	UG/G-DRY	98689	W9			0.63			
TE TRACHLOROETHENE	UG/G-DRY	98690	W9			<0.25			
TOLUENE	UG/G-DRY	98691	W9			<0.25			
1,1,1-TRICHLOROETHANE	UG/G-DRY	98692	W9			<0.25			
1,1,2-TRICHLOROETHANE	UG/G-DRY	98693	W9			<0.25			
TFICHLOROETHENE	UG/G-DRY	98694	W9			<0.25			
M-XYLENE	UG/G-DRY	98695	W9			<0.25			
MIBK	UG/G-DRY	98696	W9			<0.50			
DMDS	UG/G-DRY	98697	W9			<0.25			
EEENZENE	UG/G-DRY	98699	W9			<0.25			

ENVIRONMENTAL SCIENCE & ENGINEERING  
 PROJECT NUMBER 88425 00000  
 FIELD GROUP 36-7-47  
 ALL

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06/24/88  
 NAME RMA TASH 47/1  
 PROJECT MANAGER BILL FRASER  
 LAB COORDINATOR JOE VONDICK

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	METHOD	36-7-47	3688A	3688B	
DATE				101	103	104	
TIME				03/14/88 13:46	03/16/88 09:40	03/16/88 09:51	
UNK577	UG/G	90577					
UNK594	UG/G	90594	Q9				
UNK629	UG/G	90629	Q9				
UNK630	UG/G	90630	Q9	20			
UNK637	UG/G	90637	Q9				
UNK555	UG/G	90555	Q9				
UNK556	UG/G	90556	Q9				
UNK582	UG/G	90582	Q9				
UNK617	UG/G	90617	Q9				
UNK161	UG/G	90161	Q9				
UNK541	UG/G	90541	Q9				
UNK551	UG/G	90551	Q9				
UNK591	UG/G	90591	Q9				
UNK595	UG/G	90595	Q9				
UNK518	UG/G	90518	Q9				
UNK661	UG/G	90661	Q9				
UNK523	UG/G	90523	Q9				
UNK616	UG/G	90616	Q9				
UNK673	UG/G	90673	Q9				
UNK550	UG/G	90550	Q9				
UNK572	UG/G	90572	Q9				
UNK627	UG/G	90627	Q9				
UNK526	UG/G	90526	Q9				
UNK614	UG/G	90614	Q9				
			29				

ENVIRONMENTAL SCIENCE & ENGINEERING  
PROJECT NUMBER: 80125 Ohio  
FIELD GROUP: 36-7-47  
ALL

06/24/88  
PROJECT NAME: MM TAK 471  
PROJECT MANAGER: BILL FRASER  
LAB COORDINATOR: JOE VONDRIK  
PACI # 30

## SAMPLE ID/#

PARAMETERS	STORET #	3712B	3688A	3688B
UNITS	METHOD	36-7-47	36-7-47	36-7-47
		101	103	104
DATE		02/14/88	03/16/88	03/16/88
TIME		13:46	09:40	09:51
UNK635	UG/G	90635	Q9	

ENVIRONMENTAL SCIENCE & ENGINEERING  
PROJECT NUMBER 84336 0300  
FIELD GROUP TIME  
ALL

PARAMETERS	UNITS	STORET #	METHOD	06/28/88				06/28/88				06/28/88			
				BLK	T2IMB2	T4IMB1	T4IMB1	BLK	T4IMB1	T4IMB2	T4IMB1	BLK	T4IMB1	T4IMB1	BLK
DATE	TIME	10/27/87	03/11/88	02/02/88	03/09/88	02/12/88	03/10/88	03/16/88	03/09/88	02/03/88	03/15/88	03/10/88	03/15/88	01/26/88	02/04/88
SAMPLE TYPE		71999	SO												
SITE TYPE	1	99759	QCMB												
SAMPLE DEPTH FT		99758	0	0	0	0	0	0	0	0	0	0	0	0	0
SAMPLING TECHNIQUE		72005	G	G	G	G	G	G	G	G	G	G	G	G	G
INSTALLATION CODE		99720	RK												
MOISTURE %WET WT		70320	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
CADMIUM UG/G- DRY		1028	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921	<0.921
CHROMIUM UG/G- DRY		99584	12.1	14.3	10.4	9.99	<7.16	<7.16	<7.16	<7.16	<7.16	<7.16	<7.16	<7.16	<7.16
COPPER UG/G- DRY		1043	9.56	10.6	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1
LEAD UG/G- DRY		1052	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8
ZINC UG/G- DRY		1093	41.7	40.9	39.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3
ARSENIC UG/G- DRY		1003	T9												
MERCURY UG/G- DRY		71921	V9												
THIOGLYCOL UG/G		99798	MM9												
CHLOROACETIC ACID UG/G		97285	MM9												

ENVIRONMENTAL SCIENCE & ENGINEERING  
 PROJECT NUMBER 84936 0300  
 FIELD GROUP THMB  
 ALL

06/28/88  
 PROJECT NAME RMA TASK 1  
 PROJECT MANAGER  
 LAB COORDINATOR JOE VONDRICK

PAGE#2  
 SAMPLE ID/#

PARAMETERS	UNITS	STORED #	BLK	BLK	
		METHOD	T47MBI	T47MBI	
DATE			50	61	
TIME			03/16/88	02/02/88	
SAMPLE TYPE		71999	SO	SO	
SITE TYPE	1	0			
SAMPLE DEPTH	CM	99759	QCMB	QCMB	
SAMPLING TECHNIQUE		0	0	0	
INSTALLATION CODE		72005	C	C	
MOISTURE	SAMPLE	99720	RK	RK	
	%WET WT	0			
CADMIUM	UG/G- DRY	70320	2.4	2.4	
CHROMIUM	UG/G- DRY	1028	0		
	R9				
COPPER	UG/G- DRY	99584			
	R9				
LEAD	UG/G- DRY	1043			
	R9				
ZINC	UG/G- DRY	1052			
	R9				
ARSENIC	UG/G- DRY	1093			
	R9				
MERCURY	UG/G- DRY	1003			
	T9				
		71921	<0.050		
THIODIGLYCOL	UG/G	V9			
		99798	<2.55		
CHLOROACETIC ACID	UG/G	MH9			
		97285	<18.0		
	UG/G	MH9			

ENVIRONMENTAL SCIENCE & ENGINEERING  
PROJECT NUMBER 84936 0300  
FIELD GROUP TMB  
TIME ALL  
SAMPLE ID/#

06/28/88

RMA TASK 1

PROJECT MANAGER  
LAB COORDINATOR JOE VONDRIK

PARAMETERS	STORET #	BLK	BLK	BLK	BLK	BLK	BLK	BLK	BLK	SAMPLE ID/#
UNITS	METHOD	TMB 411	TMB 412	TMB 85	TMB 86	TMB 87	TMB 88	TMB 88	TMB 89	
DATE		02/02/88	02/02/88	03/09/88	03/10/88	03/09/88	03/14/88	03/14/88	03/16/88	
TIME					09:15			10:20		
SAMPLE TYPE	71999	SO	SO	SO	SO	SO	SO	SO	SO	
SITE TYPE	1	99759	QCMB	QCMB	QCMB	QCMB	QCMB	QCMB	QCMB	
SAMPLE DEPTH FT		99758	0	0	0	0	0	0	0	
SAMPLING TECHNIQUE		72005	G	G	G	G	G	G	G	
INSTALLATION CODE		99720	RK	RK	RK	RK	RK	RK	RK	
MOISTURE %WET WT		70320	2.4	2.4	2.4	2.4	2.4	2.4	2.4	
ALDRIN UG/G-DRY		98356	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	<0.94	
ATRAZINE UG/G-DRY		98655	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	<0.73	
CHLORDANE UG/G-DRY		98361	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	
P-CL-PHENYL METH-SULFIDE UG/G-DRY		98654	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	
P-CL-PHENYL METH-SULFOXIDE UG/G-DRY		98703	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	
P-CL-PHENYL METH-SULFONE UG/G-DRY		98652	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	
DBCP (NEMACON) UG/G-DRY		98851	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	
DICYCLOPENTADIENE UG/G-DRY		98363	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	<0.29	
DDC, PP, UG/G-DRY		98364	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	
DDT, PP, UG/G-DRY		98860	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	
DI ELDORIN UG/G-DRY		98365	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	
DIMP UG/G-DRY		98865	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,4 DITHIANE UG/G-DRY		98867	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	
DMP UG/G-DRY		98867	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	
ENDRIN UG/G-DRY		98369	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	<0.70	
HEXAChLOROCYCLOPENTADIENE UG/G-DRY		98867	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	
ISODRIN UG/G-DRY		98869	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	
MALATHION UG/G-DRY		98848	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	

ENVIRONMENTAL SCIENCE & ENGINEERING		06/28/88		PROJECT NAME	RMA TASK 47	PAGE # 1
PROJECT NUMBER 88425 0000		FIELD GROUP T47MBI		PROJECT MANAGER	LAB COORDINATOR JOE VONDICK	
PARAMETERS	UNITS	STORE#	BLK	BLK	BLK	SAMPLE ID/#
			T47MBI 227	T47MBI 228	T47MBI 229	T47MBI 230
DATE	TIME		03/10/88	03/14/88	03/15/88	03/16/88
SAMPLE TYPE		71999	SO	SO	SO	SO
SITE TYPE	I	99759	QCMB	QCMB	QCMB	QCMB
SAMPLE DEPTH FT		99758	0	0	0	0
SAMPLING TECHNIQUE		72005	G	G	G	G
INSTALLATION CODE		99720	RK	RK	RK	RK
MOISTURE	%WT WT	70320	2.4	2.4	2.4	2.4
DICYCLOPENTADIENE	UG/G-DRY	98651	<0.27	<0.27	<0.27	<0.27
TRANS-1,2-DICHLOROETHENE	UG/G-DRY	98687	<0.25	<0.25	<0.25	<0.25
ETHYLBENZENE	UG/G-DRY	98688	<0.25	<0.25	<0.25	<0.25
METHYLENE CHLORIDE	UG/G-DRY	98689	0.94	0.99	0.40	<0.25
TETRACHLOROETHENE	UG/G-DRY	98690	<0.25	<0.25	<0.25	<0.25
TOLUENE	UG/G-DRY	98691	<0.25	<0.25	<0.25	<0.25
1,1,1-TRICHLOROETHANE	UG/G-DRY	98692	<0.25	<0.25	<0.25	<0.25
1,1,2-TRICHLOROETHANE	UG/G-DRY	98693	<0.25	<0.25	<0.25	<0.25
TRICHLOROETHENE	UG/G-DRY	98694	<0.25	<0.25	<0.25	<0.25
M-XYLENE	UG/G-DRY	98695	<0.25	<0.25	<0.25	<0.25
MIBK	UG/G-DRY	98696	<0.50	<0.50	<0.50	<0.50
DMDS	UG/G-DRY	98697	<0.25	<0.25	<0.25	<0.25
BENZENE	UG/G-DRY	98698	<0.25	<0.25	<0.25	<0.25
O-AND/OR P-XYLENE	UG/G-DRY	98700	<0.50	<0.50	<0.50	<0.50
CARBON TETRACHLORIDE	UG/G-DRY	98699	<0.25	<0.25	<0.25	<0.25
CHLOROBENZENE	UG/G-DRY	98681	<0.25	<0.25	<0.25	<0.25
CHLOROFORM	UG/G-DRY	98682	<0.25	<0.25	<0.25	<0.25
1,1-DICHLOROETHANE	UG/G-DRY	98683	<0.25	<0.25	<0.25	<0.25

ENVIRONMENTAL SCIENCE & ENGINEERING  
 PROJECT NUMBER 88425 0000  
 FIELD GROUP T47MB1  
 ALL

SAMPLE ID/#

PARAMETERS	UNITS	STORET #	BLK	BLK	BLK	BLK
DATE		METHOD	T47MB1	T47MB1	T47MB1	T47MB1
TIME			227	228	229	230
1,2-DICHLOROETHANE		98684	<0.28	<0.28	<0.28	<0.28
BICYCLOHEPTADIENE	UG/G-DRY	W9				
DBCP (NEMAGON)	UG/C-DRY	98686	<0.25	<0.25	<0.25	<0.25
UNK160	UG/G	98652	<0.33	<0.33	<0.33	<0.33
UNK159	UG/C	90160	10			
		90159		5	100	5

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